INSIGHT

Landmark study sets the stage for optimal biogas production

In order to optimize biogas production and capitalize on the revenue potential created by the Renewable Fuel Standard, the City of Ft. Worth is planning phased upgrades to its Village Creek Water Reclamation Facility.

After completing a landmark study for the City, Bartlett & West submitted a preliminary engineering report analyzing options for biogas upgrading and ancillary improvements.

The study

Bartlett & West's report considered historical and projected sludge and gas production, with a wide range of potential high strength waste feedstock growth scenarios. Other factors analyzed in the report included:

- Alternative levels of methane recovery for optimal balance between life cycle costs and additional revenue
- Operational strategies to maximize RIN D-code classifications and revenue
- Operational strategies to maximize the carbon credit scoring for enhanced revenue through California's Low-Carbon Fuel Standard program
- Optimal technological solutions for each unit process, e.g., desulfurization, siloxane and VOC removal, compression and CO2 separation.

Facility needs

Prior to constructing the biogas upgrading improvements, the City of Ft. Worth is working to find solutions for multiple infrastructure needs. The City wants Village Creek to move away from using biogas within the combined cycle system to produce heat and electricity for plant operations. Bartlett & West is assisting the City in utilizing natural gas instead of biogas in a combined cycle system and selecting an overall plant electrical distribution strategy.

Innovation and collaboration

In a unique twist, Ft. Worth is coordinating its facility improvements with a local landfill, which has historically sold landfill gas to the City for use in Village Creek's combined cycle system. Because the City and landfill both plan to capitalize on the Renewable Fuel Standard, they each plan to construct upgrading facilities to facilitate selling pipeline-quality renewable natural gas into the utility pipeline. The landfill gas upgrading system is expected to be operational first, and Ft. Worth will convey biogas to the landfill's upgrading system until the City's facilities upgrades are complete.

Phased growth plan

The City of Ft. Worth has decided renewable natural gas production is the most fiscally responsible long-term path forward. They are well-poised to succeed with an abundant supply of high-strength waste in the region. The City will maximize its available resources and revenue potential by leveraging optimal technological solutions and operational strategies identified by Bartlett & West engineers. The phased growth approach will keep the City's investment manageable and its revenue scalable over time.